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The Conceptual System of Officer Applicants to Military High Schools from the Air Force, the Navy and the Army in Poland

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Summary: The paper contains the basic information concerning the system of officer applicants to Military High Schools in Poland. It is presented methods of psychological assessment of the applicants and the role of psychologists in the whole recruitment procedures.

1. Introduction

The method of selection used by the Polish military psychologists is a combination of classical psychological tests and the methods developed originally by Polish military psychologists. These tests are designed to select the best candidates for the cadet schools. The general concept is directed to the identification of individuals with specific psychological traits. A young man possessing average intelligence, normal personality, good eye-hand co-ordination, and high motivation to serve the country may have chance to be selected.

2. The system of selection in the Polish Army

The necessity of an assessment of applicants to the Army officer school results from specific demands of the educational system in the Polish Army. For over 15 years applicant's selection has been focused on identification of psychological skills and abilities. In spite of the present democratic changes in our country the new selection system is not reflected in tests applied for officers' selection. The process of officers selection is concentrated on intellectual and temperamental assessments. However, it must also include the ability to co-operate with other people. The basic psychological task, which was established in the beginning of creation the test battery for selection purposes, pointed out the characteristics of professional profile of officer cadets made both by psychologists and commanders. The characteristics concerned, commanding, technical and logistic profile.

The initial establishment was based on the Guilford Intelligence Theory. The tests were constructed by Polish psychologists and consist of

four separate methods: the RiD-S-4 is the test to study general mental ability of the candidate, the TSP-3 test is an instrument to study three-dimensional spatial imagination and thinking of the candidate. In the TRW test the candidate has to state the truthfulness of the conclusions he has drawn after learning given facts. The TRS-4 test is to learn an active range of the vocabulary of the candidate. The battery of these four tests (RiD-S-4, TSP-3, TRW, TRS-4) permits approximately to qualify an IQ of an applicant. The IQ is made with the multiplied regression equation. The coefficient of the multiplied correlation for all the tests is 0.77, and individually for each test as follows:

RiD-S-4	0.453
TSP-3	0.442
TRW	0.240
TRS-4	0.266

An assessment of temperament is based on The Temperament Questionnaire by J. Strelau. According to the Strelau's foundations temperament is meant as stable features of the organism which reveal themselves in formal traits of behavior as its energetic level and temporal characteristic. Temperament in comparison with other psychological phenomena is less susceptible to change. Reactivity as a primary a primary temperament feature determines the sensitivity (sensory and emotional) and the organism's capacity to work (its endurance). Having in mind persons who occupy extreme positions on the reactivity dimensions it maybe distinguish between high and low reactive individuals. High reactive individuals characterized by high sensitivity and low endurance are less qualified to the service. The results given above are not only directed to qualify the candidate for a proper training. An influence of social environment and standard living of the candidate must also be considered, especially if they could effect on the lower results of the tests. Those factors are included in the psychological interview, which is

aimed on receiving an information necessary for a deep diagnosis of individual characteristics of the candidate.

The psychological interview is expected to:

- a. determine individual characteristics of the candidate;
- b. discover the mechanism of justification for taking up the military studies;
- c. initially determine fields of interests of the candidate;
- d. determine factors enabling efficient fulfilling the requirements of the military studies, especially an ability of learning;
- e. ascertain a rate of adaptation to the new social conditions at the military college, persistence in undertaken activities;
- f. ascertain clear indications whether the candidate cannot join the military college. Some contraindications could also result from the points a., b., c., & d.

The psychological interview is expected to provide the necessary data concerning the candidate behavior under the environmental obstacles. The special attention is paid to the following attributes:

- leadership and organizing abilities;
 - ability to manage and act under unexpected circumstances;
 - social and emotional maturity;
 - ability of independent judgment;
 - individual courage and an ability to act independently;
 - friendliness;
 - emotional resistance;
 - manner of expressing one's thoughts.
- and negatives:
- tendency to abuse alcohol, drugs, etc.;
 - poor social adaptation among the others;
 - learning difficulties;
 - low level of discipline;
 - tendency to social conflicts (aggressiveness, destructiveness, etc.);
 - extreme egoism;
 - reluctance to respect orders;
 - low level of mental resistance;
 - extreme intolerance of the others' behavior.

When interviewing the candidate, the psychologist tends to create readiness to cooperate to weaken any fear of expressing his thoughts. That is why the first contact is so significant. That should be a warm and kind meeting with the candidate and a good point to start a friendly conversation.

In 1998 year in the Polish Army 12, 3% candidates became disqualified because of different psychological dysfunction.

3. The Polish Air Force system of officer selection*

Nowadays psychological evaluation in Polish Air Force is based on paper and pencil tests and Vienna Test system which mainly includes operational tests presented on the computer screen. Tests used for investigation of pilot candidates can be divided into three groups:

Cognitive tests:

Progressive Scale of Intelligence Matrix-Raven
Schild's Table of black and red figures measuring of operational thinking. Time performance and number of errors are taken into account.

Toulouse-Pieron's test is used to investigate a speed of perception and attention divisibility dealing with figures (zero-content material).

Operational tests :

Choice reaction time to measure complex visual stimuli and single acoustic stimuli,

Tracking test (Three Dimensional Point Tracking 3 PTR) to measure parameters of eye-hand co-ordination

DEST-1 (Test to Examine Speed-Distance Estimation) designed to assessment accuracy of the two varying vectors: speed distance.

2 HAND (Two Hand Co-ordination) designed to assess motor skills used to perform technical tasks, specifically eye-hand-hand co-ordination.

C. Emotional and personality structure tests:

Anxiety as a state (X1) and as a trait (X2) according to Spielberger Questionnaire.

The J. Brzezinski Emotional Control Questionnaire used for controlling emotional expression, emotional versus rational motivation, emotional resistance, situation control, emotional stimulation and finally for measuring the general results of scores

I-E Rotter locus of control scale

The EPQ-R Eysenck. test. The questionnaire measures: a) level of neuroticism (EPQ-N), b)intra-extraversion (EPQ-E), c) psychotism (EPQ-P), d) control scale (EPQ-L).

*This part is partially adapted from IAMP Symposium's presentation (Florence 1999) announced by Dr J. Maciejczyk from Polish Air Force Institute of Aviation Medicine

The temperamental traits according to the Strelau Temperament Questionnaire. This questionnaire is measuring the following traits: a) alertness, b) perseveratibility, c) sensor reactivity, d) emotional reactivity, e) endurance, f) activity.

External criteria were used for verification of prognostic values of the psychological tests. The results of 4 following task were performed during simulator flights and results obtained from basic air training. In the Polish Air Force Institute of Aviation Medicine the program called "Complex System of candidates selection to Military Aviation with use of simulators and military aircraft" was introduced in years 1993-1995. The basic aim of the program was to elaborate new methods of the candidates estimation to be military pilot. The most important investigative device was the „Japetus" flight simulator and complex, practical not used until now in qualifying, set of medical and psychological tests (for example eye movement monitoring). The flight simulator tests were introduced in the Polish Air Force training in accordance with the selection program for pilot candidates. The "Japetus" flight simulator is able to acquire perception and decision-making abilities simulating the real flight conditions as well as the objective measure of aviation skills.

Basing upon the multivariate analysis and discrimination it was determined which of the tests for psychological selection were specifically efficient to predict success or defeat within the groups of pilot candidates (basing on aviation simulator performance). These tests evaluated the temperamental traits, perceptive-motor skills and speed-distance estimation. The similar results were obtained when the psychological tests and basic air training results were compared. The traits discriminating candidates who perform their flights either good or bad, were the traits of temperament, emotional control (Brzezinski), perception properties (RT), operative thinking (Schulte test), eye hand co-ordination (2 HAND) and relation speed-distance (DEST-1).

Temperament is related to the essential, relatively constant personality traits, manifesting mainly in the formal characteristic of behavior (energy and time consuming parameters). The temperament traits have an effect upon shaping the so-called style of activity (way of doing some things). Furthermore, the temperamental traits constitute one of the most crucial factors determining preference toward an individual in a sphere of activity or situation, featuring the notion of stimulation. In addition to temperamental traits, the most discriminative perception properties

determining groups are such as skills of operational thinking focusing upon perception-attention and memory (Stiletto Table), eye-hand co-ordination and ability of the proper evaluation of speed-distance relation (2 Hand, DEST-1). The interindividual differences in the ability to judge speed and distance attain high values. This test, however, correlates with the temperamental traits. The flight simulator's results of applicants subjected to investigations, and moreover their either good or bad performance can be anticipated by psychological test performance quality 2 HAND and DEST-1. The above mentioned tests require from the

candidates some skills to change behavior in response to alterations of external conditions. The behavior mobility also involves such features as speed, rate, maintenance and repetition. It was indicated, that the mobility plays an important role in adaptation process and that trait of temperament enables some relations or links between temperament and cognitive skills.

Good results in psychological tests and completion of basic flights (individual flight) were practiced as psychological criteria for air training in military aviation.

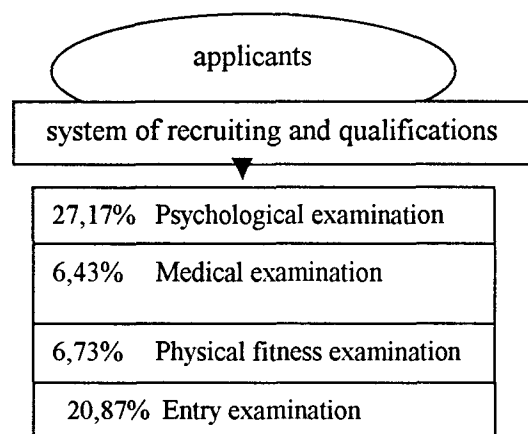
4. The system of qualifying applicants in the Polish Navy officers school

A psychological diagnosis in the Polish Navy is understood as a usage of various methods like: observation, interviews and psychological tests to discover disturbances in candidates' behavior concerning, first of all, their motivation and cognitive processes prognoses included, both in educational and adaptation problems in college. The process of psychological selection starts from the moment of arrival of the candidates to college and continues to the moment of completion of the studies. The base which created psychological implication was built on opinions of experts qualifying features of personalities of successfully graduated Navy officers. The expert's opinion was treated as the model of personality, which became the foundation for further scientific investigations. The model included ethic traits, physical-fitness traits, personal culture factor, psychological traits, and professional traits. In a theoretical language of psychology it isn't the true model but rather a background for applying different method of applicant's assessment. The model determines the pattern to which students of the Naval Academy should tend and realizes three functions: firstly to determine theoretical construct, specific ideal model, secondly gives the possibility of approximate comparisons of individual with ideal,

thirdly-thanks to the model one can compare results from recruitment and selection process of candidates and observation of students behaviors. The first stage of selection is aimed on:

- choice from candidates these, who may function on optimal level according to the model
- exclusion of these candidates who show psychopathic disturbances behavior and asocial tendencies.

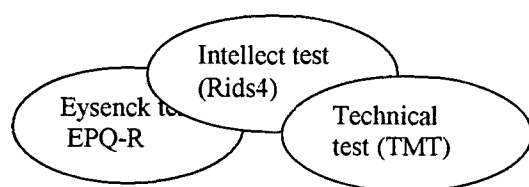
Results of applicants' selection and qualification in Naval Academy (1996-1998)



Special attention should be paid on the results of psychological investigations -27, 17 % of the whole number of candidates are excluded due to results of psychological reasons.

More detailed structure of investigations of candidates is introduced below on following schema:

Results of psychological investigations are subjected to the multiple correlation in respect of intellectual and adaptation factors



EPQ-R intro-extraversion psychotism ,level of neuroticism

Rids-4-mental thinking abilities, visual-space abilities, verbal abilities

TMT-technical thinking abilities

Multiple regression function for prognosis of study success is $PSS = 3x1 (Rid) + 4x (TMT)$. Applicants obtaining in neuroticism above 8 in standard points scores are automatically rejected. After enclosing multiple regression results of personality and intellectual investigation 4 groups were created but only applicants from group 1 are qualified to the next stage of selection.

G ₁	Y _{w1} and Y _{w2} between 4-10 standard points scores-positive type of personality, low level of anxiety
G ₂	Y _{w1} and Y _{w2} between 4-10 standard points scores-negative type of personality, high level of anxiety
G ₃	Y _{w1} and Y _{w2} between 1-3 standard points scores-positive type of personality, low level of anxiety
G ₄	Y _{w1} and Y _{w2} between 1-3 standard points scores-negative type of personality, high level of anxiety

5. Conclusion

The common base of three services selection conceptual system is an inclination to identify psychological traits. Only the Polish Navy psychologists declare that their system is grounded on the model. This model isn't available in written material that is why it isn't possible to verify its foundation. But the Polish Navy psychologists try to create prognoses through observation of qualified cadets up to the end of their military education. After graduation the final psychological opinion is made and sent to the Personal Department Ministry of Defense. This is an example of unique co-operation between psychologists and personal officers.

On the other hand, in case of Air Force the psychological testing is part a of wider procedure including also entrance exams and simulator flight performance. It means that psychological part of selection has only additional (not obligatory) character and may be taken into account (or not) in the final qualifying decision. The worse (in author's opinion) solution was chosen in the Army because psychological investigation is taken in small psychological units located in 40 cities. It means that standard of the investigations is difficult to compare between units. At this level, information is sent to the officers schools where the final selection process is taking place. The feedback information is not available for the psychologists in units and they don't know if their results may have any influence on final qualifying decision.